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EXAMINER	
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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/029,916	Applicant(s) AGNIHOTRI ET AL.	
	Examiner Hunter B. Lonsberry	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 05 January 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-39 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-39 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/5/07 have been fully considered but they are not persuasive.

Applicant argues that Ellis does not teach the claims as amended, in particular the new limitation of the algorithm detecting only a representative sample (pages 17-19).

The Examiner disagrees. Ellis teaches that only a desired portion of the incoming media stream is sampled not the entirety of the stream, column 34, lines 35-39, step 100 figure 12. As less than the full stream is sampled, a representative sample of the content is selected.

Thus Ellis teaches the limitation of "only a representative sample".

Applicant argues that Buczak is non analogous art. (pages 25-27).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that Buczak is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both Ellis and Perlman are concerned with the optimization of an algorithm. Buczak is concerned with a similar problem, and optimizes an algorithm utilizing a genetic algorithm. Buczak provides an advantage in that it selects the "most correct" condition via the use of a genetic algorithm. This increases the accuracy of the selection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 30 and 31 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,621,454 to Ellis.

Regarding Claim 30, Ellis teaches, a program product (30 – figure 11) comprising computer readable-code which, when executed, performs a method for optimizing the performance of an algorithm (figure 12) for detecting predetermined content in a media information stream, the algorithm being a function of a set of parameters (S120 – figure 12), the method comprising the steps of: performing the algorithm at least once to detect only a representative sample (only a desired portion of the incoming media stream is sampled not the entirety of the stream, column 34, lines 35-39, step 100 figure 12) of (the predetermined content in the media information stream, while employing a respective set of parameters in the algorithm for each performance thereof (Col. 34, lines 35-53).

Ellis discloses, automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream (Col. 34, lines 42-53 and Col. 38, lines 14-30). Particularly Ellis discloses the various rules are stored permitting future modifications, which reads on "evolving at least one respective set of parameters employed in the algorithm".

Regarding Claim 31, Ellis discloses, a storage medium (30 – figure 11) storing a program having computer readable-code which, when executed, performs a method for optimizing the performance of an algorithm (figure 12) for detecting predetermined content in a media information stream, the algorithm being a function of a set of

parameters (S120 – figure 12), the method comprising the steps of: performing the algorithm at least once to detect only a representative sample (only a desired portion of the incoming media stream is sampled not the entirety of the stream, column 34, lines 35-39, step 100 figure 12) of the predetermined content in the media information stream, while employing a respective set of parameters in the algorithm for each performance thereof (Col. 34, lines 35-53).

Ellis discloses automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream (Col. 34, lines 42-53 and Col. 38, lines 14-30). Particularly Ellis discloses the various rules are stored permitting future modifications, which reads on "evolving at least one respective set of parameters employed in the algorithm".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3 Claims 1-3, 5, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,621,454 to Ellis in view of U.S. Patent 6,366,296 to Borcezky..

Regarding Claim 1, Ellis discloses a method for optimizing the performance of an algorithm for detecting predetermined content in a media information stream,

Providing an algorithm for detecting predetermined content in the media information stream, the algorithm being a function of a set of parameters (Col. 30, lines 30-39),

performing the algorithm (figure 12) at least once to detect only a representative sample (only a desired portion of the incoming media stream is sampled not the entirety of the stream, column 34, lines 35-39, step 100 figure 12) of the predetermined content in the media information stream, while employing a respective set of parameters in the algorithm for each performance thereof (Col. 34, lines 35-53).

automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream (Col. 34, lines 42-53 and Col. 38, lines 14-30). Particularly Ellis discloses the various rules are stored permitting future modifications, which reads on "evolving at least one respective set of parameters employed in the algorithm".

Further Ellis discloses that the algorithm is implemented on a machine (Col. 30, lines 30-39).

Ellis fails to teach repeating the performing and evolving step until the at least one respective set of parameters employed in the algorithm is optimized.

Borcezky discloses the use of a media browser which utilizes meta data (column 3, lines 35-60) to optimize the use of the parameters in an algorithm over a number of steps via the use of learning Bayesian networks (column 5, line 64-column 6, line 54, column 7, lines 6-12) which determine that the metadata determined for a particular feature is more or less reliable than original anticipated, and thereby adjusts the threshold.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify Ellis to utilize the metadata and learning Bayesian network as taught by Borcezky for the advantage of determining that the metadata determined for a particular feature is more or less reliable than original anticipated, and thereby adjusts the threshold.

As for Claim 2, Ellis teaches, wherein the media information stream includes at least one of video and audio information, and the predetermined content includes desired or undesired content (Col. 33, lines 20-32).

As for Claim 3, Ellis teaches, wherein the algorithm detects the predetermined content based on a detection of at least one predetermined feature derived from the media information stream (Col. 30, lines 40-48).

As for Claim 5, Ellis teaches, wherein the media information stream includes a video information stream divided into a plurality of frames, the predetermined content includes at least one commercial (Col. 9, line 55 – Col. 10, line 6), and the algorithm includes the steps of: detecting a plurality of black or unicolor frames in the video information stream (Col. 30, lines 40-48).

Ellis teaches, identifying the presence of a beginning portion of a commercial based on the detection of at least one of the plurality of black or unicolor frames (Col. 34, lines 13-26).

Ellis teaches, identifying the presence of an ending portion of the commercial based on the detection of at least one other of the plurality of black or unicolor frames (Col. 34, lines 13-26).

As for Claim 16, Ellis teaches, wherein the step of automatically evolving includes evolving the at least one respective set of parameters employed in the algorithm to generate an evolved set of parameters which is optimized to enable the

algorithm to detect the predetermined content in the media information stream with a maximum degree of accuracy (Col. 34, lines 42-53 and Col. 38, lines 14-30). Particularly Ellis discloses the various rules are stored permitting future modifications, which reads on "evolving the at least one respective set of parameters employed in the algorithm".

4. Claims 4, 6-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis in view of U.S. Patent 6,366,296 to Borcezky in further view of Buczak et al. "Buczak" (U.S. 6,957,200).

As for Claim 4, Ellis fails to explicitly disclose wherein the step of automatically evolving includes performing a genetic algorithm to evolve the at least one respective set of parameters. In an analogous art, Buczak discloses automatically evolving includes performing a genetic algorithm (figure 4) to evolve the at least one respective set of parameters (Col. 6, lines 48-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ellis with the teachings of Buczak in order to facilitate automatically evolving includes performing a genetic algorithm to evolve the at least one respective set of parameters for the benefit of using a search algorithm based on natural selection to narrow the individuals that can

be seen as candidate solutions to the problem being solved (Buczak – Col. 4, line 64 – Col. 5, line 7).

As for Claim 6, Ellis and Borcezky fails to explicitly disclose wherein the step of automatically evolving comprises the steps of: determining the accuracy at which the algorithm detects the predetermined content in the media information stream for each performance of the algorithm; selecting at least one of the respective sets of parameters, based on a result of the step of determining the accuracy; and producing at least one offspring set of parameters based on the at least one set of parameters selected in the selecting step.

In an analogous art, Buczak discloses, determining the accuracy at which the algorithm detects the predetermined content in the media information stream for each performance of the algorithm (Col. 6, lines 1-11).

Buczak discloses, selecting at least one of the respective sets of parameters, based on a result of the step of determining the accuracy (Col. 6, lines 41-43).

Buczak discloses, producing at least one offspring set of parameters based on the at least one set of parameters selected in the selecting step (Col. 6, lines 48-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Ellis and Borcezky with the teachings of Buczak to include determining the accuracy, selecting at least one of the

respective sets of parameters, and producing at least one offspring for the benefit of determining the optimal set of parameters to solve the solution to the problem.

As for Claim 7, Ellis and Buczak disclose, in particular Buczak teaches wherein the step of automatically evolving further comprises the steps of: further performing the algorithm at least once to detect the presence of the predetermined content in the media information stream, while employing a respective offspring set of parameters, produced in the producing step, in the algorithm for each further performance thereof (180 – figure 2, Col. 6, lines 48-65). As shown in figure 2, after the offspring are created, the algorithm loops back to the beginning and the fitness of the offspring are determined.

Ellis and Buczak disclose, in particular Buczak teaches, determining the accuracy at which the algorithm detects the predetermined content in the media information stream for each further performance of the algorithm (160 - Figure 2, Col. 6, lines 1-10).

Ellis and Buczak disclose, in particular Buczak teaches, further selecting one or more of at least one respective set of parameters selected in the selecting step and at least one offspring set of parameters produced in the producing step, based on a result of that step of determining (170,180 – figure 2, Col. 6, lines 33-43 and lines 48-50).

As for Claim 8, Ellis and Buczak disclose, in particular Buczak teaches, wherein the step of automatically evolving further comprises the steps of: determining if there is a convergence of all sets of parameters remaining after the further selecting step (165 – figure 2) (Col. 6, lines 12-25) and if there is a convergence, storing a record of at least one of those sets of parameters selected in the further selecting step (Col. 6, lines 25-32).

As for Claim 9, Ellis and Buczak disclose, in particular Buczak teaches, wherein the step of producing comprises: pairing randomly-selected ones of the sets of parameters selected in the selecting step (Col. 6, lines 44-45).

Ellis and Buczak disclose, in particular Buczak teaches, determining if the sets of parameters paired in the pairing step are incestuous; and for each paired sets of parameters determined to be non-incestuous, swapping one or more values of the parameters of those sets with one another (Col, 6, lines 48-65). These steps are known in the art as "crossover" (figure 3A), which is disclosed in Col. 6, line 66 – Col. 7, line 10.

As for Claim 10, Ellis and Buczak disclose, in particular Buczak teaches, wherein the step of determining if the sets of parameters paired in the pairing step are incestuous comprises: determining a number of corresponding parameter values of each paired sets of parameters, which differ from one another, if any (Col. 6, lines 19-21 and lines 33-43).

Ellis and Buczak disclose, in particular Buczak teaches, determining if the number of corresponding parameter values determined to be differing from one another is less than a predetermined incest threshold (Col. 6, lines 48-57).

As for Claim 11, Ellis and Buczak disclose, in particular Buczak teaches, wherein the step of automatically evolving further comprises the steps of: determining if there is a convergence (165- figure 2) of all sets of parameters remaining after the further selecting step (Col. 6, lines 12-25).

Ellis and Buczak disclose, in particular Buczak teaches, if there is no convergence, mutating at least one value of a most optimum one of all the sets of parameters remaining after the further selecting step, to produce plural mutated versions of the most optimum set of parameters (Col. 6, lines 33-43, lines 48-51, lines 61-64, and Col. 7, lines 7, lines 28-40).

Ellis and Buczak disclose, in particular Buczak teaches, performing at least some steps of the method again, beginning with performing the algorithm, but plural times, to detect the presence of the predetermined content in the media information stream while employing the most optimum set of parameters and the mutated versions of the most optimum set of parameters, in respective performances of the algorithm (160,165, 170,180 - Figure 2) (Col. 6, lines 1-51). Buczak teaches the algorithm is performed the convergence criteria is achieved using the most optimum parameters as established by the algorithm.

As for Claim 12, Ellis and Buczak disclose, in particular Buczak teaches, wherein the step of mutating comprises: producing plural copies of the most optimum set of parameters; and changing at least one parameter value of each of the plural copies of the most optimum set of parameters (Figure 4A) (Col. 7, lines 28-53).

As for Claim 13, Ellis and Buczak disclose, in particular Buczak teaches, wherein the step of producing comprises: pairing randomly-selected ones of the sets of parameters selected in the selecting step Col. 6, lines 44-45).

Ellis and Buczak disclose, in particular Buczak teaches, determining if the sets of parameters paired in the pairing step are incestuous by: determining a number of corresponding parameter values of each paired sets of parameters, which differ from one another, if any, and determining if the number of corresponding parameter values determined to be differing from one another is less than a predetermined incest threshold (Col. 6, lines 54-64). This step is known in the art as "crossover" (figure 3A), which is disclosed in Col. 6, line 66 – Col. 7, line 10.

Ellis and Buczak disclose, in particular Buczak teaches, for each paired sets of parameters determined to be non-incestuous, swapping at least corresponding values of the parameters of those sets with one another, wherein the step of determining if there is a convergence comprises at least one of: determining if the predetermined incest threshold is equal to a predetermined value (165 – figure 2) (Col. 6, lines 12-32).

Ellis and Buczak disclose, in particular Buczak teaches, determining if performances of the algorithm employing the sets of parameters remaining after the further selecting step each result in detections of the predetermined content with substantially a same degree of accuracy (160 – figure 2) (Col. 6, lines 1-10).

As for Claim 14, Ellis and Buczak disclose, in particular Buczak teaches, determining if any offspring sets of parameters remain after the further selecting step is performed (Col. 6, lines 48-64) and if no offspring set of parameters remains, decreasing the predetermined incest threshold by a predetermined reduction value (Col. 6, lines 12-32).

As for Claim 15, Ellis and Buczak disclose, in particular Buczak teaches, wherein if there is a convergence of all of the sets of parameters remaining after the further selecting step (165 – figure 2), performing at least one of: determining if the method has been performed a predetermined number of times (Col. 6, lines 14-19).

Ellis and Buczak disclose, in particular Buczak teaches, determining if a predetermined number of offspring sets of parameters has been produced, and wherein if either of those determining steps results in an affirmative determination, performing the step of storing (Col. 6, lines 19-32).

As for Claim 17, Ellis fails to disclose the step of forwarding at least one of the algorithm and the evolved set of parameters to a predetermined destination. In an analogous art, Buczak discloses the step of forwarding at least one of the algorithm and the evolved set of parameters to a predetermined destination (Col. 6, lines 26-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ellis to include the step of forwarding at least one of the algorithm and the evolved set of parameters to a predetermined destination as taught by Buczak for the benefit of storing the algorithm that most accurately identifies commercial segments.

5. Claims 18, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis in view of Buczak et al. "Buczak" (U.S. 6,957,200).

Regarding Claim 18, Ellis discloses a method for evaluating a media information stream (figure 12), comprising the steps of: performing one or more algorithms, each to detect the presence of predetermined content in the media information stream...(Col. 12, (Col. 34, lines 34-53). However, Ellis fails to disclose, ...wherein each algorithm is a function of a corresponding chromosome; and automatically determining a value, for the chromosome of at least one of the algorithms, which enables that algorithm to detect the presence of the predetermined content in the media information stream with an increased degree of accuracy relative to the accuracy achieved when other values are employed.

In an analogous art, Buczak discloses ...wherein each algorithm is a function of a corresponding chromosome (150,155 – figure 2) (Col. 5, lines 8-13 and lines 43-67).

Buczak discloses, automatically determining a value, for the chromosome of at least one of the algorithms (Col. 5, lines 43-57), which enables that algorithm to detect the presence of the predetermined content in the media information stream with an increased degree of accuracy relative to the accuracy achieved when other values are employed and utilizes the determined value of the chromosome and corresponding at least one of the algorithms to detect the presence of the predetermined content I the media information stream with an acceptable degree of accuracy. (figure 2) (Col. 6, lines 1-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ellis with the teachings of Buczak to facilitate each algorithm as a function of a corresponding chromosome for the benefit of narrowing the parameters of a chromosome to determine a solution to the problem.

Regarding Claim 29, Ellis teaches, an apparatus (16 – figure 2) for optimizing the performance of an algorithm for detecting predetermined content in a media information stream, the algorithm being a function of a set of parameters, the apparatus comprising: means for performing the algorithm (414 – figure 3) at least once to detect only a representative sample (only a desired portion of the incoming media stream is sampled not the entirety of the stream, column 34, lines 35-39, step 100 figure 12) of the predetermined content in the media information stream, while employing a respective

set of parameters in the algorithm (S120 – figure 12) for each performance thereof (Col. 34, lines 35-53).

However, Ellis fails to disclose, means for automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream. In an analogous art, Buczak discloses, means for automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream (figure 2) (Column 6, lines 1-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ellis with the teachings of Buczak in order to facilitate a means for automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream for the benefit of evolving a search algorithm based on natural selection to narrow the parameters that can be seen as candidate solutions to the problem being solved (Buczak – Col. 4, line 64 – Col. 5, line 7).

6. Claims 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman (U.S. 6,577,346) in view of Buczak.

Regarding Claim 19, Perlman teaches, an apparatus (102 – figure 2) for evaluating a media information stream, comprising: a memory (216,218,220 – figure 2) for storing a media information stream and a program, at least a portion of the program including instructions for performing a method for optimizing the performance of an algorithm for detecting predetermined content in a media information stream, the algorithm being a function of a set of parameters (Col. 5, line 65 – Col. 6, line 9 and Col. 7, lines 7-15). Perlman discloses a table stored in memory that is used to associate stored image patterns or "parameters" with image patterns found in a received video segment (Col. 8, lines 19-21).

Perlman further discloses, a controller (204 – figure 2) coupled to said memory, said controller being operable under the control of the program stored in said memory for performing the algorithm (figure 3) at least once to detect only a representative sample (Col. 7, lines 7-15) of the predetermined content in the media information stream stored by said memory, while employing a respective set of parameters in the algorithm for each performance thereof (Col. 7, lines 16-34).

However, Perlman fails to disclose automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream. In an analogous art, Buczak discloses automatically evolving at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream (Col. 6, lines 48-63). Therefore, it would have been obvious to one of ordinary skill in the art

at the time the invention was made to modify Perlman with the teachings of Buczak in order to automatically evolve at least one respective set of parameters employed in the algorithm to maximize the degree of accuracy at which the algorithm detects the predetermined content in the media information stream for the benefit of evolving a search algorithm based on natural selection to narrow the parameters that can be seen as candidate solutions to the problem being solved (Buczak – Col. 4, line 64 – Col. 5, line 7).

As for Claim 20, Perlman and Buczak disclose, in particular Perlman teaches, wherein the media information stream includes video information (Col. 7, lines 7-17).

As for Claim 21, Perlman and Buczak disclose, in particular Buczak teaches, wherein at least a portion of the program includes a genetic algorithm, and said controller operates under the control of the program to automatically evolve the at least one respective set of parameters by performing the genetic algorithm (figure 2) (Col. 6, lines 1-63).

As for Claim 22, Perlman and Buczak disclose, in particular Buczak teaches, wherein said controller operates under the control of the program to perform the automatically evolving by: determining the accuracy at which the algorithm detects the

predetermined content in the media information stream for each performance of the algorithm (160 – figure 2) (Col. 6, lines 1-10).

Perlman and Buczak disclose, in particular Buczak teaches, selecting at least one of the respective sets of parameters, based on a result of the determining (170 – figure 2) (Col. 6, lines 33-39).

Perlman and Buczak disclose, in particular Buczak teaches, producing at least one offspring set of parameters based on the at least one set of parameters selected in the selecting (180 – figure 2) (Col. 6, lines 48-63).

As for Claim 23, Perlman and Buczak disclose, in particular Buczak teaches, wherein said controller also operates under the control of the program to further perform the evolving by: further performing the algorithm at least once to detect the presence of the predetermined content in the media information stream, while employing a respective offspring set of parameters, produced in the producing, in the algorithm for each farther performance thereof (180 – figure 2, Col. 6, lines 48-65). As shown in figure 2, after the offspring are created, the algorithm loops back to the beginning and the fitness of the offspring are determined.

Perlman and Buczak disclose, in particular Buczak teaches, determining the accuracy (160 – figure 2) at which the algorithm detects the predetermined content in the media information stream for each further performance of the algorithm (Col. 6, lines 1-10).

Perlman and Buczak disclose, in particular Buczak teaches, further selecting one or more of at least one respective set of parameters selected in the selecting (170 – figure 2) and at least one offspring set of parameters (180 – figure 2) produced in the producing, based on a result of that determining (Col. 6, lines 33-53).

As for Claim 24, Perlman and Buczak disclose, in particular Buczak teaches, wherein said controller also operates under the control of the program to further perform the evolving by: determining if there is a convergence of all sets of parameters remaining after the further selecting (165 – figure 2) (Col. 6, lines 12-25).

Perlman and Buczak disclose, in particular Buczak teaches, if there is a convergence, storing a record of at least one of those sets of parameters selected in the further selecting (Col. 6, lines 25-32).

As for Claim 25, Perlman and Buczak disclose, in particular Buczak teaches, wherein said controller also operates under the control of the program to further perform the evolving by: determining if there is a convergence (165 – figure 2) of all sets of parameters remaining after the further selecting (Col. 6, lines 12-25).

Perlman and Buczak disclose, in particular Buczak teaches, if there is no convergence, mutating a most optimum one of all the sets of parameters remaining after the further selecting, to produce plural mutated versions of the most optimum set

of parameters (Col. 6, lines 33-43, lines 48-51, lines 61-64, and Col. 7, lines 7, lines 28-40).

Perlman and Buczak disclose, in particular Buczak teaches, performing at least some steps of the method again, beginning with performing the algorithm, but plural times, to detect the presence of the predetermined content in the media information stream while employing the most optimum set of parameters and the mutated versions of the most optimum set of parameters, in respective performances of the algorithm (160,165, 170,180 - Figure 2) (Col. 6, lines 1-51). Buczak teaches the algorithm is performed the convergence criteria is achieved using the most optimum parameters as established by the algorithm.

As for Claim 26, Perlman and Buczak disclose, in particular Buczak teaches, wherein said controller performs the evolving to generate an evolved set of parameters which is optimized to enable the algorithm to detect the predetermined content in the media information stream with a maximum degree of accuracy (Col. 6, lines 48-63).

As for Claim 27, Perlman and Buczak disclose, in particular Buczak teaches, an interface coupled to said controller, wherein said controller is operable for forwarding at least one of the evolved set of parameters and information representing the algorithm through the interface towards at least one external destination coupled to that interface (Col. 6, lines 26-32).

7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Buczak as applied to claim 27 above, and further in view of Ellis.

As for Claim 28, the combination of Perlman and Buczak fail to disclose, wherein the apparatus includes a server, and the external destination includes an information appliance. In an analogous art, Ellis teaches, wherein the apparatus includes a server (16 – figure 1) (Col. 8, lines 66-67), and the external destination includes an information appliance (14 – figure 1) (Col. 9, lines 1-13). The server here matches a definition of a computer, which provides some service for other computers connected to it via a network and the information appliance is a device responsible for receiving and processing of information. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Perlman and Buczak with the teachings of Ellis in order to include a server and an information appliance for the benefit of identifying new segments, such as commercials, before transmitting the video signal to a central site.

8. Claims 32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Ellis.

Regarding Claim 32, Perlman discloses a system for exchanging information (100 – figure 1), comprising: at least one first information apparatus (Col. 4, lines 25-29). Although Perlman does not disclose a cable headend or "first information apparatus", Perlman does disclose second information apparatus may be a cable box so there must be a headend or "first information apparatus" associated with the overall system in order for the cable box to receive a video signal or "information stream".

Perlman discloses, at least one second information apparatus (102 – figures 1 & 2), comprising: an interface (212 – figure 2), coupled to said first information apparatus (headend not shown) through an external communication interface (110 – figures 1 and 2).

Perlman discloses, a memory (216, 218, and 220 – figure 2) storing at least a program (Col. 5, line 65 – Col. 6, line 9).

Perlman discloses, a controller (204 – figure 2) coupled to said memory (216, 218, and 220 – figure 2) and said interface (208 – figure 2), said controller operating under the control of the program stored in said memory for performing a method (Col. 7, lines 7-15) comprising: (a) performing an algorithm (figure 3) at least once to detect only a representative sample (Col. 7, lines 7-15) of predetermined content in a provided media information stream (110 – figure 2), while employing a respective set of parameters (340 – figure 3) (Col. 7, lines 18-22 and Col. 8, lines 16-21) in the algorithm for each performance thereof, wherein the algorithm is a function of the set of parameters (Col. 7, lines 16-38).

However, Perlman fails to explicitly disclose (b) automatically evolving at least one respective set of parameters employed in the algorithm to determine an optimum set of parameters which maximizes the degree of accuracy at which the algorithm detects the predetermined content in the media information stream, and (c) forwarding information representing at least one of the algorithm and the optimum set of parameters to the at least one first information apparatus through the interface and the external communication interface.

In an analogous art, Ellis discloses, (b) automatically evolving at least one respective set of parameters employed in the algorithm to determine an optimum set of parameters which maximizes the degree of accuracy at which the algorithm detects the predetermined content in the media information stream (Col. 34, lines 42-53 and Col. 38, lines 14-30). Particularly Ellis discloses the various rules are stored permitting future modifications, which reads on “evolving at least one respective set of parameters employed in the algorithm”.

Ellis further discloses, (c) forwarding information representing at least one of the algorithm and the optimum set of parameters to the at least one first information apparatus (12 – figures 1-2) through the interface and the external communication interface (Col. 10, lines 25-30). Ellis discloses forwarding signatures or “information” of new segments identified by control computer 30 to central site 12. Although the interface and the external communication interface are not shown in figures 1 and 2, control computer 30 must have these interfaces in order to transmit data to the first information appliance central site 12.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Perlman with the teachings of Ellis in order to facilitate automatically evolving at least one respective set of parameters employed in the algorithm and forwarding information representing at least one of the algorithm and the optimum set of parameters to the at least one first information apparatus for the benefit of more accurately identifying segments of interest within a video stream in order to reduce the amount of new segments or commercials that must be identified by a workstation (Ellis - Col. 9, lines 10-31).

As for Claim 37, Perlman and Ellis disclose, in particular Perlman discloses wherein the first information apparatus (headend not shown) is operable for providing the information stream (video 110 – figures 1 and 2) to said controller (204 – figure 2) through said interface (208 – figure 2) and said external communication interface (110 – figure 2), and wherein said controller performs the method after receiving that provided information stream (310 – figure 3) (Col. 7, lines 16-34).

9. Claims 33-36 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Ellis as applied to claim 32 above, and further in view of Takenaga et al. "Takenaga" (U.S. 5,086,479).

As for Claim 33, Perlman and Ellis fail to explicitly disclose wherein the first information apparatus is an information appliance, and the second information apparatus is a server.

In an analogous art, Takenaga discloses wherein the first information apparatus (30 – figure 1) (Col. 4, lines 15-16) is an information appliance, and the second information apparatus (20 – figure 1) (Col. 4, lines 29-36) is a server (Col. 4, lines 29-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Perlman and Ellis with the teachings of Takenaga to facilitate the first information apparatus is an information appliance, and the second information apparatus is a server for the benefit of transferring learning data information between a server and a client in a server/client system (Takenaga - Col. 4, lines 29-38).

As for Claim 34, Perlman and Ellis fail to disclose wherein the first information apparatus is a server and the second information apparatus is an information appliance.

In an analogous art, Takenaga teaches, wherein the first information apparatus is a server (30 – figure 1) (Col. 4, lines 15-16), and the second information apparatus is an information appliance (20 – figure 1) (Col. 4, lines 11-13 and Col. 5, lines 8-14).

As for Claim 35, Perlman and Ellis disclose, in particular Perlman teaches, ...performing the algorithm (figure 3), while employing the optimum set of parameters (340 – figure 3) in the algorithm, to detect the predetermined content in a provided information stream (Col. 7, lines 16-34). Perlman discloses management device 102 receives video input on line 110. Further, Perlman discloses management device 102 can be a cable box (Col. 4, lines 27-29) and it's known in the art for a headend or server to provide an information stream to a cable box (102 – figure 1). Therefore, Perlman discloses detecting video segments, such as commercials, from a provided information stream from a headend or server.

However, Perlman and Ellis fail to disclose a further interface, coupled to said interface of said second information apparatus through the external communication interface; and a further controller coupled to said further interface, said further controller being responsive to said further interface receiving the information from said second information apparatus for at least one of storing the information in an associated further memory.

In an analogous art, Takenaga teaches wherein the first information apparatus (30 – figure 1) comprises: a further interface (4-2 – figure 1) (Col. 4, lines 25-28), coupled to said interface (4-1 – figure 1) of said second information apparatus (20 – figure 1) through the external communication interface (40 – figure 1) (Col. 4, lines 25-28).

Takenaga discloses, a further controller (1-2 – figure 1) coupled to said further interface (4-2 – figure 1), said further controller being responsive to said further interface receiving the information from said second information apparatus (20 – figure 1) for at least one of storing the information in an associated further memory (6 – figure 1) (Col. 4, lines 29-51).

As for Claim 36, Perlman, Ellis, and Takenaga disclose, in particular Takenaga teaches wherein the first information apparatus (30 – figure 1) (Col. 4, lines 15-16) is an information appliance, and the second information apparatus (20 – figure 1) (Col. 4, lines 29-36) is a server (Col. 4, lines 29-38).

As for Claim 38, Perlman and Ellis fail to explicitly disclose wherein the first information apparatus is an information appliance, and the second information apparatus is a server.

In an analogous art, Takenaga discloses wherein the first information apparatus (30 – figure 1) (Col. 4, lines 15-16) is an information appliance, and the second information apparatus (20 – figure 1) (Col. 4, lines 29-36) is a server (Col. 4, lines 29-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Perlman and Ellis with the teachings of Takenaga to facilitate the first information apparatus is an information appliance, and the second information apparatus is a server for the benefit of

transferring learning data information between a server and a client in a server/client system (Takenaga - Col. 4, lines 29-38).

As for Claim 39, Perlman and Ellis fail to disclose wherein the first information apparatus is a server and the second information apparatus is an information appliance.

In an analogous art, Takenaga teaches, wherein the first information apparatus is a server (30 – figure 1) (Col. 4, lines 15-16), and the second information apparatus is an information appliance (20 – figure 1) (Col. 4, lines 11-13 and Col. 5, lines 8-14).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hunter B. Lonsberry whose telephone number is 571-272-7298. The examiner can normally be reached on Monday-Friday during normal business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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